

**We Claim:**

1. A data packet ordering method in a mobile communication network employing hierarchical routing with data packet forwarding comprising the following steps:
  - a) providing at least one data flow comprising a predefined sequence of data packets,
  - b) forwarding at least one of said data packets of the sequence via a first network element (RNC\_OLD) over a first transmission path to a user equipment, whereby a part of the data packets are temporarily buffered in the first network element (RNC\_OLD) during transmission,
  - c) establishing a second transmission path, while forwarding the data packet sequence, such that the remaining data packets of the sequence not yet transmitted over the first path are forwarded via a second network (RNC\_NEW) element,
  - d) forwarding of the data packets buffered in the first network element (RNC\_OLD) to the second network (RNC\_NEW) element for providing all data packets comprised by the data packet sequence to the user equipment,
  - e) receiving and ordering of the data packets within said second network element (RNC\_NEW) according to the packet data priority given by the data packet sequence,
  - f) forwarding the ordered data packets to the user equipment (UE).
2. The method according to claim 1, wherein in the ordering step, the data packets received by the second network element are assigned to separated data queues in the second network element depending on their priority in the data packet sequence.
3. The method according to claim 2, wherein the assignment is established and/or the priority is evaluated on the basis of a preset data packet identifier.

4. The method according to claim 3 wherein the data packet identifier is preset to identify the data packets of different origin and/or forwarding path and/or destination address and/or port address and/or priority sequence number within the second network element.

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5. The method according to claims 1 to 4, wherein the data packets received by the second network element over the second path or over a third path via the first network element or over other paths via other network elements are buffered in separated data queues depending on which path and/or from which network elements the data packets are forwarded to the second network element.

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6. The method according to claim 5, wherein, for forwarding the data packets of each data queue, the data packets received by each data queue are worked through in a first-in, first-out manner, and the data queues themselves are worked through in an order depending on the priority of the data packets with regard to the data packet sequence comprised by the respective data queue.

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7. The method according to claims 1 to 4, wherein the ordering step comprises the following sub-steps:

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  - (i) assigning a received data packet to a data queue on the basis of corresponding data packet identifier information,
  - (ii) sequential ordering of the received data packets by applying data packet identifier information.
8. The method according to claim 7, wherein the assignment is performed by generating and/or identifying a data queue on the basis of the source address, the destination address and the port address of the received data packet and wherein the sequential ordering is carried out on the basis of priority sequence number.

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9. An apparatus and/or a mobile communication system comprising means for carrying out the method according to one of the preceding claims.

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